

REMARKS

Applicants have carefully reviewed the contents of the Office Action mailed February 28, 2005, the Advisory Action mailed June 22, 2005, and the Interview Summary dated August 2, 2005. The specification is amended to correct a typographical error, claim 2 is amended as in previous Amendment After Final filed May 27, 2005, and claims 18 and 29 are editorially amended. Reconsideration is respectfully requested in view of the foregoing amendments and the comments set forth below.

Interview of August 2, 2005

1. The Applicants thank Examiners Senfi and Le for their time and consideration in attending the interview on August 2, 2005. Pursuant to the Interview Summary of August 2, 2005, the Applicants provide the following Statement of the Substance of the Interview.

Participants: (1) Examiner Behrooz Senfi, (2) Examiner Vu Le, (3) Zhang Zhong, (4) Alan Lipton, and (5) Catherine Voorhees.

Date of Interview: August 2, 2005.

Type: Personal.

Claims discussed: Claim 1.

Identification of Prior Art Discussed: U.S. Patent No. 6,490,319 to Yang (hereinafter Yang).

Substance of Interview: Examiner will revisit Yang to determine whether the foreground and background are encoded on a per frame basis, which is a distinct difference highlighted by the Applicants. A decision will be made subsequently and applicant will be notified.

No Prima Facie Case in Previous Office Action

2. Based on the reconsideration by the Office discussed in the Interview Summary, Examiner Senfi, after the interview, directed the Applicants' attention to U.S. Patent No. 5,262,856 to Lippman et al. (hereinafter Lippman). (Applicants are concurrently submitting an Information Disclosure Statement to make Lippman of record officially.) The Applicants appreciate the extra effort provided by Examiner Senfi in locating and providing the additional reference.

The Office cited Lippman to the Applicants to overcome the deficiencies of Yang. Thus, the Office recognized that the rejections based on Yang in the Office Action mailed February 28, 2005 are insufficient and do not set forth a prima facie case. As such, the Applicants respectfully request that either (1) prosecution be re-opened or (2) the application be passed to allowance.

Lippman Fails to Overcome the Deficiencies of Yang and Ryoo

3. In the previous Office Action on pages 2-3 in sections 2-3, claims 1, 4-9, 16-20 and 25-27 were rejected under 35 U.S.C. § 102(e) as being anticipated by Yang. Further, on pages 3-4 in sections 4-5, claims 3, 10, 12-15, 21-24 and 28-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yang in view of U.S. Patent No. 5,990,957 to Ryoo (hereinafter Ryoo). To overcome the deficiencies of Yang, the Office provided Lippman after the interview on August 2, 2005. The Office is apparently asserting that the combination of Yang in view of Lippman and the combination of Yang in view of Lippman and Ryoo teaches the claims. These rejections are respectfully traversed.

As per claim 1, claim 1 recites a "method for encoding a video sequence, said video sequence comprising a background composite and foreground regions, comprising the step

of: encoding said video sequence based on balancing bits per pixel for said background composite with bits per pixel for said foreground regions to achieve similar quality between the background composite and the foreground regions in a reconstructed video sequence.”

As now recognized by the Office, Yang fails to teach encoding a video sequence comprising a background composite and foreground regions. Instead, as noted previously, Yang teaches encoding a single frame, and not a video sequence comprising a background composite and foreground regions. Yang, column 2, lines 38-39. Yang lacks any teaching of a background composite and foreground regions. As such, the previous Office Action failed to set forth a prima facie case to reject claim 1.

To overcome this deficiency, the Office provided Lippman to the Applicants after the interview of August 2, 2005. Lippman teaches compositing a video sequence from a background composite and a sequence of moving objects. Lippman, Abstract. Lippman, however, lacks any discussion of balancing bits per pixel of the background composite with bits per pixel of the sequence of moving objects. Apparently, the Office is asserting that the combination of Yang and Lippman teaches the claimed invention. This two-way combination, however, fails to teach the claimed invention for at least two reasons.

First, Lippman teaches away from the combination postulated by the Office. Lippman teaches compositing a video sequence from a background composite and a sequence of moving objects for use in HDTV. Lippman, column 1, lines 17-65. For HDTV, the perceptual video quality is required to be very high, and, thus, mismatching of background composite and foreground moving objects is not at issue. In other words, for HDTV, the number of bits available is quite large, and bit balancing is not needed. Thus, one of ordinary skill in the art would not consider using bit balancing with the teachings of Lippman.

Second, the combination of Yang and Lippman postulated by the Office would not result in the claimed invention. Extending the controlling of the bit rate for a single frame as taught by Yang to controlling the bit rate for Lippman's video sequence is not a trivial task. Controlling the bit rate for a video sequence is much more complicated than controlling the bit rate for a single frame. For example, complex algorithms, such as, for example, those disclosed in the specification, are needed to control the bit rate of a video sequence. See, e.g., specification, Algorithms 1-6, 5', and 6'. One of ordinary skill in the art could not produce such algorithms based on the teachings of Yang and Lippman, and the claimed invention would not be apparent to one of ordinary skill in art. Instead, using the teachings of Yang and Lippman, one of ordinary skill in the art would be befuddled as to how to use the techniques of Yang for encoding a single frame in order to encode the background composite and sequence of moving objects of Lippman. Thus, the combination of Yang and Lippman would not result in the claimed invention.

Further, Ryoo fails to overcome any of the deficiencies of Yang and Lippman.

Claims 2-17 are dependent from claim 1 and are allowable as being dependent from an allowable claim.

Claims 18 and 19 recite similar subject matter to that recited in claim 1 and are, thus, allowable for similar reasons.

Claims 20-26 are dependent from claim 19 and are allowable as being dependent from an allowable claim.

Claim 27 recites similar subject matter to that recited in claim 1 and is, thus, allowable for similar reasons.

Claims 28-29 are dependent from claim 27 and are allowable as being dependent from an allowable claim.

Amendments to the Specification and Claims

4. The specification is amended by correcting the typographical error on page 15 in the paragraph beginning at line 8. In the this paragraph, the two instances of “Table 2” are changed to “Table 1” to correctly refer to the table at the top of page 15 in Algorithm 1. Entry of this amendment is respectfully requested.

5. In the Office Action on page 5 in section 6, claim 2 is objected as reciting allowable subject matter in a claim dependent from a rejected base claim. The Applicants thank the Examiner for the indication of allowable subject matter. Claim 2 is amended to independent form. (The amendment to claim 2 is the same as in the Amendment After Final filed May 27, 2005, which was entered only for purposes of appeal as stated in the Advisory Action mailed June 22, 2005.) Entry of this amendment and the allowance of claim 2 are respectfully requested.

6. Claim 18 is editorially amended to remove the single means limitation. Claim 18 now recites a computer and no longer recites a means-plus-function limitation. Entry of this amendment is respectfully requested.

7. Claim 29 is editorially amended to correct a typographical error. Claim 29 is dependent from claim 28, which recites an apparatus. Claim 29 is amended to correctly recite an apparatus in the preamble. Entry of this amendment is respectfully requested.

THEREFORE, because all rejections have been overcome, it is submitted that claims 1-29 are allowable, and such allowance is requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael A. Sartori", with a long horizontal flourish extending to the right.

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Date: August 29, 2005

DC2-676413